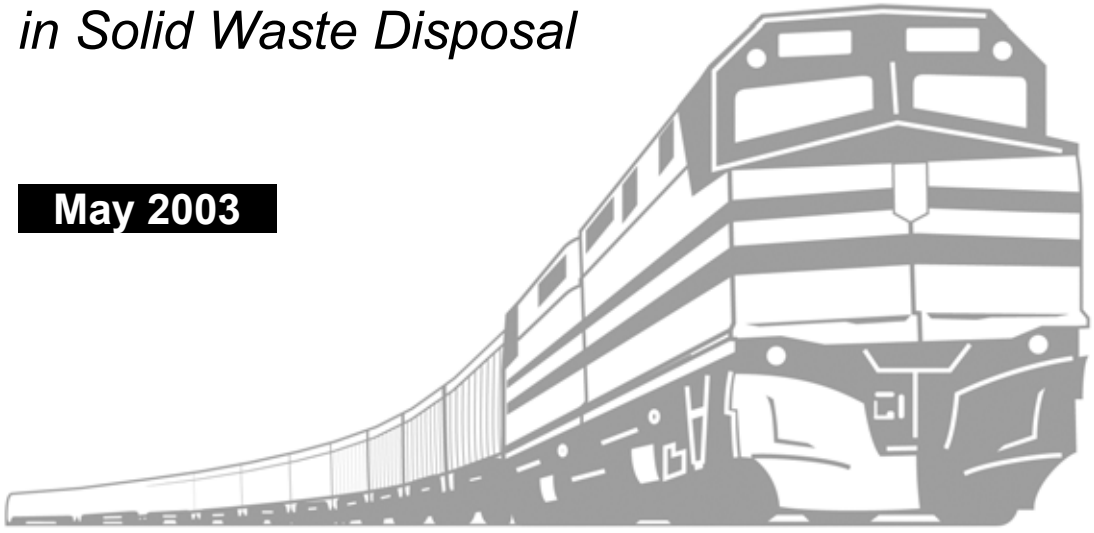
Business Case for a County-Owned Intermodal Facility

Promoting Competition in Solid Waste Disposal

May 2003



King County
Department of
Natural Resources and Parks
Solid Waste Division

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King Street Center, Suite 701
201 S. Jackson St.
Seattle, WA 98104-3855

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EXECUTIVE SUMMARY

This document presents the King County Executive's business case for increasing competition for the future disposal of the County's solid waste. The preferred alternative is for the County to own and operate an intermodal facility to export and dispose waste after the Cedar Hills Regional Landfill reaches capacity and closes, expected at the end of year 2012. Since the late 1950s, a central role of King County's Solid Waste Division (the Division) has been to provide waste disposal services to the County's service area, which includes all of King County's cities and unincorporated areas, except for the City of Seattle and Milton. The City of Seattle is responsible for collection, transport, and disposal of solid waste generated within its own city limits.

After analyzing six distinct alternatives for implementing waste export**,** it became clear that public-sector ownership and operation of an intermodal facility would most effectively increase competition and address the region's long-term waste disposal needs at reasonable prices. A publicly owned facility would 1) ensure that waste transfer and disposal costs are kept low by promoting competitive choices among solid waste firms, 2) enhance system reliability, and 3) maintain consistency with other County policy directives for waste disposal, reduction, and recycling. It is also consistent with the County's mandated responsibility of being accountable for regional waste disposal services, even as the Division transitions from operating a landfill to a waste export system, where solid waste is taken from the County transfer stations to an intermodal facility and then long-hauled to an-out-of-County landfill for disposal. As the analyses presented herein show, conditions affecting the waste disposal industry and waste export in the region as a whole strongly support the need for a continued public presence.

In particular, two concerns influenced the analysis of a County-owned and operated intermodal facility:

- **Concern for competition:** Analyses prepared by consulting economists indicate that the solid waste market, particularly for disposal services, is highly concentrated, which can result in a low level of market competition. The result of this low level of competition could be higher prices and lower levels and quality of service. In this region, the concern for competition is furthered by rules of the Washington Utilities and Transportation Commission that allow private-sector companies to charge the prevailing regional tipping fee rather than a charge related to their actual cost of providing service. This regulatory framework allows them to charge the County's tipping fee, which incorporates the cost of serving self-haul customers and other services not provided by the private-sector companies. In addition, the private-sector companies promote a business strategy of vertical integration – whereby the individual companies control all segments of the solid waste industry including collection, transfer/transport, and disposal. This integration hinders other potential firms from being able to compete for

business in any segment of the solid waste market. Ratepayers will not realize the full benefits of increased market competition without public-sector action to make it happen, given the absence of economic regulation of disposal services. In other parts of the Country, actions taken by the public sector to promote competitive choices have resulted in ratepayer savings of about 40%.

- **Concern for intermodal capacity and system reliability:** Truck-to-train intermodal capacity is essential for waste export to be a viable means of disposal. When the Cedar Hills Regional Landfill closes, the volume of solid waste exported from the region will increase by about 170%. Intermodal capacity in the region was developed by the railroads to handle commercial cargo, not solid waste. As a result, there is already limited intermodal capacity in the region for handling solid waste and a potential for insufficient capacity in the future. The three existing intermodal sites owned by the two railroad companies in the region (only one of which currently handles solid waste) are built out with no room to expand. In addition, there will be increasing demands on the use of these facilities for handling commercial cargo in the future, which is more central to the railroad business and important to the economic vitality of the region as a whole. It will be important to have sufficient intermodal capacity in the region to avoid conflicts with commercial cargo transport.

County ownership and operation of an intermodal facility will be the most effective way to address these concerns and meet the region's waste disposal needs after Cedar Hills closes. Ideally, the facility would be situated in an industrial zone where it could be accessed by both of the railroad companies operating in the western United States. It would also be adjacent to a navigable waterway so it could be accessed by barge, should that transport method prove cost effective. It should also be strategically located so as to minimize costs of short-hauling waste from County transfer stations, and be of sufficient size to handle the intra-site truck and train traffic needed to handle the County's solid waste.

The key advantages of a County-owned and operated intermodal facility are as follows:

- **It would be feasible to implement:** Such a facility would take time to develop, but could be completed prior to the time Cedar Hills reaches capacity. The Division will have the expertise to efficiently operate such a facility.
- **It would promote competitive choices:** At this time, only two solid waste companies have secured intermodal capacity in the region and would be in a position to bid to receive King County's solid waste. Currently, there are at least five companies potentially able to receive the County's waste. A publicly owned intermodal facility, accessible to both rail lines, would make it easier for more disposal companies to bid. The County has received letters from two potential competitors indicating their interest in bidding for King County's waste stream, should they be in a position to access the wastes.
- **It would address concerns for intermodal capacity and system reliability:** A publicly owned solid waste intermodal facility would be dedicated to solid waste handling, so it would directly address the concern for capacity. The facility would

not impact the transport of commercial cargo at intermodal facilities or railyards. System reliability would also be enhanced if the facility could be located adjacent to a navigable waterway.

- **It would be cost effective:** Increased competition for King County's waste stream brought about by the intermodal facility would result in lower disposal rates for King County residents. The savings would more than offset the capital and operating costs of the facility. There is some evidence that net ratepayer savings from increased competition could be more than $6 million per year. Lower rates would help lower the cost of living and doing business in the County.
- **Other considerations:** Public ownership and operation of an intermodal facility would also provide additional regional flexibility for solid waste disposal. It would make it easier to change the way waste is disposed, and to collaborate with other jurisdictions, particularly the City of Seattle, to develop cost-effective approaches to handling the region's waste. Maintaining a regional waste export system, including a strategically located intermodal facility, would also be advantageous because of economies of scale associated with landfill disposal. Having a larger, regionally consolidated disposal stream would give the County greater bargaining power to negotiate more favorable contract terms for waste export, because the contract would be more valuable to private bidders.

In summary, building an intermodal facility is a prudent, cost-effective approach to meeting the region's disposal needs as the County transitions to waste export. It is consistent with the *Final 2001 Comprehensive Solid Waste Management Plan* and the Interlocal Agreements with the cities. It represents a change in how solid waste will be disposed from public operation of a regional landfill to private-sector disposal at an out-of-County landfill. The County will not compete with the private-sector companies for disposal, but will work to maximize competition among these providers. In this way, the County will continue to be accountable to the public for low rates and reliable, high-quality disposal services.

INTRODUCTION

This document presents the King County Executive's business case for increasing competition for the future disposal of the County's solid waste. The preferred alternative is for the County to own and operate an intermodal facility to export and dispose waste after the Cedar Hills Regional Landfill reaches capacity and closes, expected at the end of year 2012.[1] Since the late 1950s, a central role of King County's Solid Waste Division (the Division) has been to provide waste disposal services to the County's service area, which includes all of King County's cities and unincorporated areas, except for the City of Seattle and Milton. Milton is part of Pierce County's system. The City of Seattle is responsible for collection, transport, and disposal of solid waste generated within its own city limits. In this business case, the term region refers to King County's service area and the City of Seattle's system combined.

After analyzing numerous alternatives for implementing waste export**,** it is clear that public-sector ownership and operation of an intermodal facility would most effectively increase competition and address the region's long-term waste disposal needs at reasonable prices. A publicly owned facility would 1) ensure that waste transfer and disposal costs are kept low by promoting competitive choices among solid waste firms, 2) enhance system reliability, and 3) maintain consistency with other County policy directives for waste disposal, reduction, and recycling. It is also consistent with the County's mandated responsibility of being accountable for regional waste disposal services, even as the Division transitions from operating a landfill to a waste export system, where solid waste is taken from the County transfer stations to an intermodal facility and then long-hauled to an-out-of-County landfill for disposal. As the analyses presented herein show, conditions affecting the waste disposal industry and waste export in the region as a whole strongly support the need for a continued public presence in the disposal market.

Organization of the Business Case

This business case is prefaced with the historical background for selecting waste export as the most viable option once the Cedar Hills Regional Landfill closes to ensure that the County keeps costs to ratepayers low, while maintaining system reliability and environmental integrity. A brief description of a waste export system is also provided. The next section presents an evaluation of the need for the public sector to promote competitive choices among private solid waste companies in King County, followed by a brief section about concern for the adequacy of intermodal capacity in the region. The business case then describes the Executive's preferred alternative of maintaining a County-owned solid waste intermodal facility, followed by a summary of six other alternatives considered during the analysis. The final section provides the conclusions of this business case.

[1] The facility would be purchased with Solid Waste Division funds and would be an asset of the Solid Waste enterprise.

Decision to Convert to Waste Export

The County's disposal system currently consists of one active landfill – the Cedar Hills Regional Landfill – which is expected to reach its permitted capacity by the end of 2012. When Cedar Hills reaches capacity, the County will close the landfill and initiate a system of waste export, in accordance with KCC 10.22.025.

The *Final 2001 Comprehensive Solid Waste Management Plan* (referred to as the CSWMP; KCSWD 2001[2]) concluded that it is more cost effective to dispose waste at Cedar Hills until it reaches capacity than to close the landfill earlier or implement partial waste export, thereby delaying the closure of Cedar Hills. Using a local landfill such as Cedar Hills is less costly to the County's ratepayers than implementing long-haul transport and disposal. As a result, King County customers receive a high level of service while paying some of the lowest solid waste disposal rates in Western Washington.

To determine the best course of action once the landfill closes, the CSWMP analyzed three alternatives for waste disposal, as well as the timing of landfill closure (KCSWD 2001). The alternatives considered were waste export, construction of a new publicly owned landfill in another county, and construction of an incinerator. Each was evaluated in terms of cost, feasibility, and compatibility with the County's goals and programs. Using these criteria, it was clear that waste export was the best alternative for meeting the County's disposal needs in the future. A detailed analysis is presented in Chapter 7 of the CSWMP (KCSWD 2001) and in Appendix A. The CSWMP did not include a plan for implementing waste export, but did include direction for the Division to develop one. This business case, particularly the details on how intermodal capacity could be provided, is an initial piece of the Division's planning effort for implementing waste export. Further, the assessment of intermodal and rail capacity will be used as the Division prepares the Waste Export Implementation Plan required by the CSWMP implementation ordinance.

Since the early 1990s, waste export has proven to be feasible for both the City of Seattle and Snohomish County (KCSWD 2001). Compared with other alternatives, the Division found that waste export is cost-effective, environmentally sound, and compatible with the County's waste reduction and recycling goals. Although the CSWMP indicated that the Division would no longer provide landfill services after Cedar Hills closes, it clearly stated that the County would still be accountable to the public for ensuring that transfer and disposal rates remain low and stable over time and that customers receive consistently high-quality services.

[2] KCSWD 2001. *Final 2001 Comprehensive Solid Waste Management Plan.* Prepared by the King County Solid Waste Division, Seattle, WA.

Description of Waste Export

Waste export is the long-haul transport of solid waste to an out-of-County landfill for disposal. An intermodal facility is the location where cargo, in this case solid waste, is transferred from one mode of transportation to another. Within the Northwest, the most common form of long-haul waste transport (more than 125 miles one way) is from solid waste transfer trucks to trains.[3] Sealed containers of waste are lifted off the transfer trucks and placed on railcars. The containers are transported to a landfill and emptied, and then hauled back to the intermodal site. The intermodal facility significantly reduces transport traffic and cost because a single train can do the work of more than 100 long-haul trucks on a daily basis.

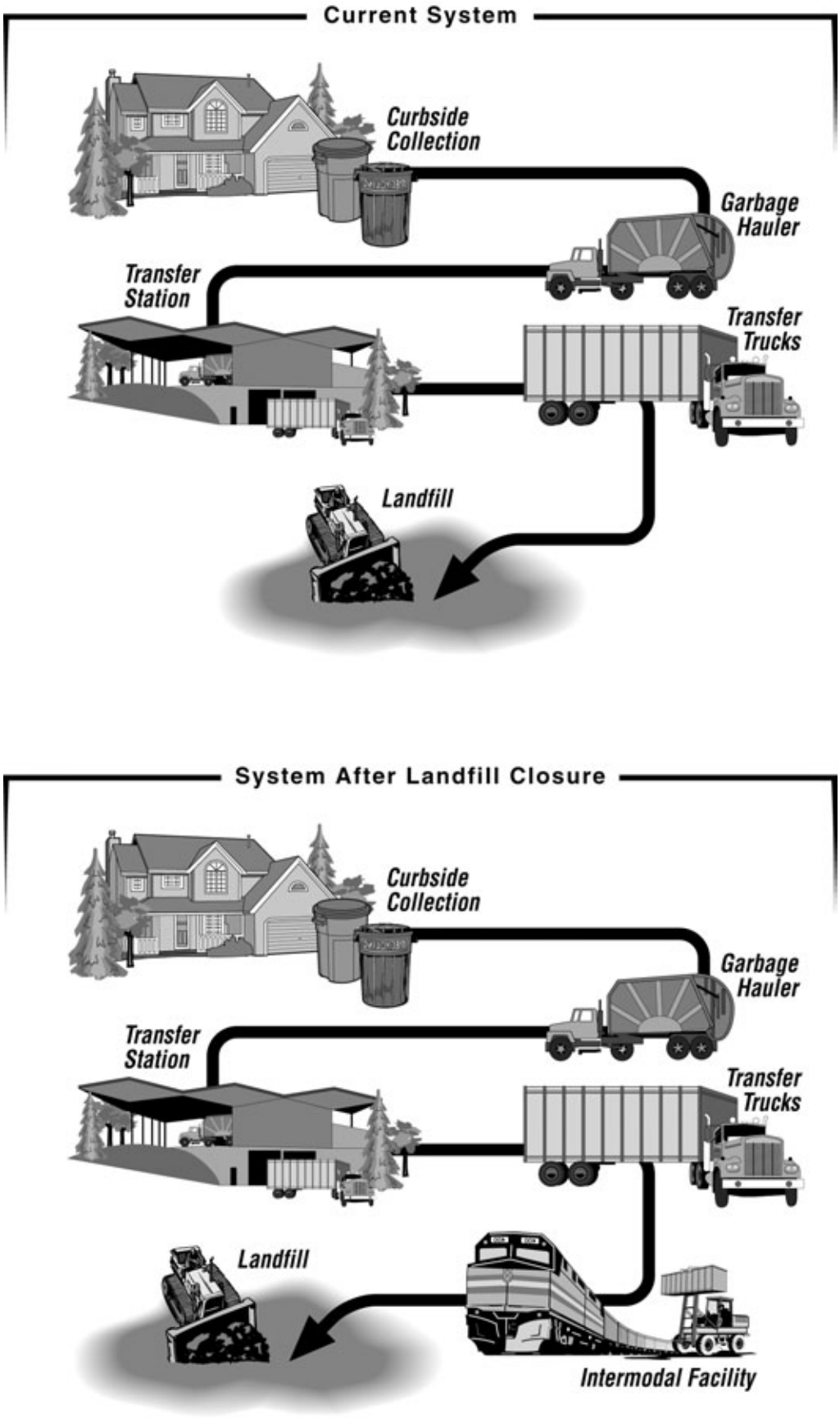
Other potential forms of solid waste long-haul transport are trucking or barging; these modes of transport are examined under *Other Alternatives Considered*. For reasons explained in that section, this business case focuses on rail hauling of solid waste as the primary method of transport.

Figure 1 illustrates the system of waste collection and disposal currently operating in the County, and the same scenario using waste export in the future. As shown in the figure, the primary difference is the addition of the intermodal facility.

The intermodal facility examined in this business case is a facility where waste is collected from geographically dispersed transfer stations and loaded onto trains for export to an out-of-County landfill, potentially more than 300 miles away. The goal is to accomplish waste transfer and transport in the most cost-effective and environmentally sound manner possible.

[3] The only exceptions are the Portland Metro Area, which exports it solid waste via truck 153 miles one-way to the Columbia Ridge Landfill, and Clark County, Washington, which barges its solid waste to the Finley Buttes Landfill via the Columbia River.

Figure 1: Current and Future Systems of Waste Collection, Transfer, and Disposal



ROLE OF MARKET COMPETITION AND PUBLIC PRESENCE IN WASTE EXPORT

The CSWMP (KCSWD 2001) calls for waste export as the preferred method for disposal of King County's solid waste after the Cedar Hills Regional Landfill closes. The Division's charge has been to ensure that waste export is implemented in a manner that cost effectively meets the region's needs and public policy goals.

When Cedar Hills closes and the Division transitions to waste export, landfill disposal services will likely be provided by the private sector. It is therefore prudent and necessary to assess the underlying economics of the marketplace for solid waste disposal services and related transfer and collection services, as well as the overall competitiveness of the solid waste industry in the region. HDR Engineering, Inc. and Ecodata, Inc. examined the benefits of competition and the fundamental economic structure of the solid waste market, generally and in King County. Their detailed analyses, along with real-market examples, are presented in Appendices B through F. In this section, key points are highlighted, as they relate to this business case.

Economic Theory and Solid Waste Markets

Before assessing the market for waste export, the Division reviewed the overall benefits of competition. HDR Engineering, Inc. and Ecodata, Inc. prepared a detailed review of the economic theory behind the benefits of competition and the risks associated with the lack thereof (Appendix B). As noted in Appendix B, perfect competition (many competing firms) and monopoly (one firm) represent the far ends of the spectrum of possible market structures, and they result in vastly different impacts on customers and firms. Simply put – a competitive market leads to lower prices for customers and a higher quality and level of service, whereas a monopoly results in higher consumer prices, greater profits for firms, and a reduced level and quality of services.

Clearly, there is a large range of varied market structures in between these two extremes. Markets characterized by only a few firms can be said to be highly concentrated. There is a wealth of economic theory and compelling evidence showing that highly concentrated markets, consisting of only a few firms, often allow firms to exercise market power by charging higher prices and offering lower levels of service to the customer. In particular, Appendix B discusses how a market consisting of a few firms can result in monopolistic competition – whereby, even without collusion, several firms operate in a manner similar to a monopoly, setting prices and service levels that generate greater profits. Appendix D illustrates several examples of the benefits of competition in different industries.

Appendix B goes on to describe how, absent regulatory or other government involvement, certain industries, such as utilities, are more susceptible to market structures that are highly concentrated. Industrial economists have developed a framework for

assessing the degree of potential competition of different industries by looking at key characteristics of each industry's market structure. Factors that can limit market competition include:

- **Barriers to entry** – i.e., when certain factors prevent new businesses from entering the marketplace, such as high start-up costs, time to obtain proper permitting, and regulatory requirements
- **Economies of scale** – i.e., when costs decrease with the volume of business, making it difficult for small firms to compete with larger ones, thus leading to larger and fewer firms in the market

For purposes of this business case, the solid waste industry must be examined by looking at its constituent parts: collection, transfer/transport, and disposal, as each segment has different characteristics that affect the degree of competition in each, as detailed in Appendix C. From the outset, however, it is relevant to note that the solid waste market is highly **vertically integrated** – meaning that all the major solid waste companies are involved in all segments of the solid waste market, including collection, transfer/transport, and disposal. Nonetheless, assessing the current degree of market competition in each segment is important because it may affect how King County transitions to waste export. Critical observations from Appendix C are summarized below for each market segment:

- **Collection Market:** generally characterized as having relatively low barriers to entry in terms of cost and fundamental technological requirements. However, regulatory barriers to entry[4], as well as the prevalence of vertical integration in the solid waste industry, can impair market competition.
- **Transfer Market:** up-front capital costs are high, and the need for procuring a large customer base means that entry into the transfer market is unlikely, except for large collection firms, especially those owning disposal sites. The transfer industry is likely to have few competitors.
- **Disposal Market:** high barriers to entry and substantial economies of scale are likely to result in a situation where there are few firms. Barriers to entry include high up-front capital costs, regulatory and permitting requirements, and community resistance. Once the up-front costs of developing a landfill are paid, per ton costs of operating a landfill are minimal, leading to large economies of scale.

The disposal market is of greatest relevance to this business case. In particular, the disposal market has substantial barriers to entry and economies of scale, making this market segment naturally susceptible to high levels of market concentration. Indeed, these factors have resulted in fewer large landfills. And this phenomenon has been exacerbated by the numerous business consolidations in the solid waste industry over the past decade. In a recent presentation to Credit Suisse First Boston, the Chief Executive

[4] Appendix F discusses some of the regulatory barriers to competition in the collection market in King County.

Officer of Allied observed that currently three firms operate 66% of the solid waste disposal capacity nationwide.

As Appendix C indicates, given the small number of firms in the solid waste disposal industry, and in the face of limited economic regulation, the private-sector disposal market is susceptible to a low level of market competition, which can result in higher prices and lower service levels than if more competition were present.

As stated earlier, one of the business objectives of large solid waste firms is vertical integration. As Appendix B concludes, this vertical integration can impair competition in the market. When vertical integration occurs, higher profits generated by the lack of competition in one segment (such as disposal) can result in higher prices in other segments, such as collection or transfer. Another effect of vertical integration is to create barriers for firms attempting to enter a particular market segment. For example, a firm that controls transfer and disposal services, as well as collection services, may make it more difficult for other collection firms to compete by not allowing them access to disposal or transfer facilities.

The lack of strong competition in the solid waste industry is a growing concern nationwide. The U.S. Department of Justice has acted in the past to ensure that solid waste markets in various parts of the Country are competitive. For example, the Department of Justice brought lawsuits against certain waste company mergers and acquisitions, settling them after companies agreed to divest some of their collection and/or disposal operations. [5] Some states and organizations across the Country have also recognized the lack of competition in the solid waste industry and called for public-sector action to promote competition. [6] Appendix E describes the actions several communities, including Seattle, have taken to ensure adequate competition in solid waste collection and disposal markets, and the ratepayer benefits that resulted.

To summarize, it is unlikely that competition will increase in Washington's solid waste disposal market without regulation (which would likely require state legislation) or other public-sector action. There is a national trend of consolidation and concentration in the market, which is supported by economic theory and current market conditions. Without an increase in market competition, ratepayers are not likely to garner the benefits of reduced fees or increased levels of service.

Given these points, one question becomes: what is the situation in King County and how will the Division address the challenge of promoting competition as it moves toward waste export?

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[5] See, for example: "Proposed Antitrust Settlement Would Clear Sanifill Landfill Sale," *Solid Waste Digest*, August 1997 (www.wasteinfo.com/news/stories/archives/1997/08/we/w98711.htm); and "Justice Department Settles Merger Lawsuit With Waste Management and Eastern Environmental Services," (www.usdoj.gov/atr/public/press_releases/1998/2082.htm).

[6] See, for example, a study by the Attorney General of the State of Maine: "An Analysis of Competition in Collection and Disposal of Solid Waste in Maine," December 2002, (www.state.me.us/ag/pr/wastereport.pdf), and "Fighting Waste Industry Consolidation with Local Ownership of Recycling Facilities," *Institute for Local Self Reliance*, November 2002.

Market Competition in King County

Given the market concentration in the solid waste industry and concern for competition nationally, it makes sense to examine the market and potential for lack of competition here in King County. In the region, the County operates eight public transfer stations and two rural drop boxes; the City of Seattle operates two public transfer stations for solid waste; and Allied and Waste Management each operate a private transfer facility for serving commercial transfer trucks only. The Washington Utilities and Transportation Commission (WUTC) regulates garbage collection in unincorporated areas or cities that choose not to contract for or provide those services themselves.

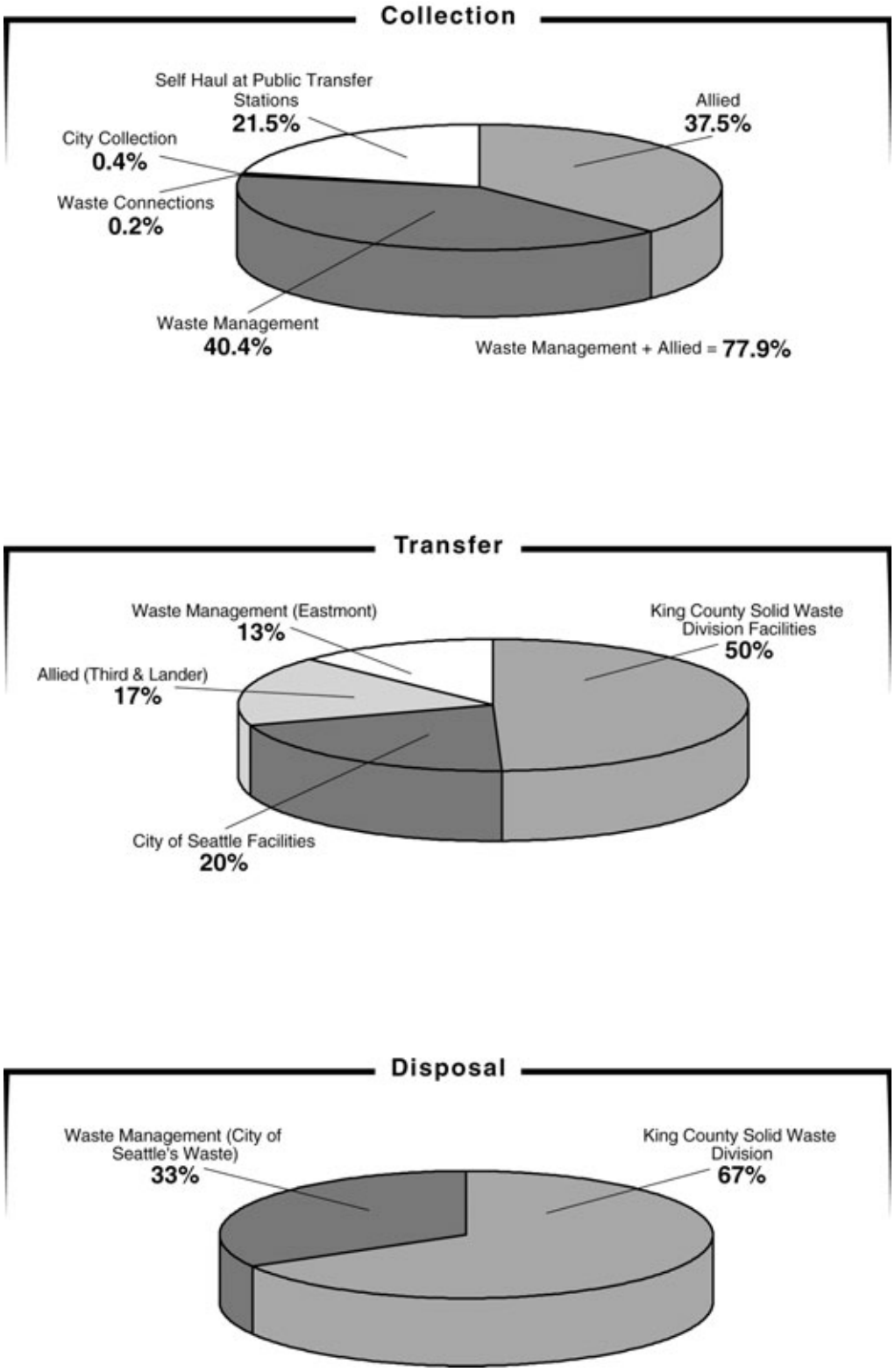
In King County's service area, solid waste is collected by the private-sector companies or is self hauled to the public transfer stations by residential and non-residential customers. Waste collected in the County is taken to the County's transfer stations or to the two private-sector facilities, and then to the Cedar Hills Regional Landfill for disposal. Waste collected in Seattle is taken to Seattle's transfer stations or to one of the two private-sector stations, and then disposed by Waste Management under a long-haul contract it has with Seattle.

In Appendix F, HDR Engineering, Inc. and Ecodata, Inc. reviewed the solid waste collection, transfer, and disposal markets in King County and the degree of competition prevalent in each. The review concludes that there are reasons to be concerned about the potential for a low level of competition among private-sector companies in the collection and disposal markets after Cedar Hills reaches capacity and closes. The remainder of this section summarizes the general findings of that study.

The market is highly concentrated: As Figure 2 indicates, Allied and Waste Management collect 78% of the solid waste in King County, including the City of Seattle. The majority of the remaining solid waste (21%) is self-hauled by residential and non-residential customers who choose to bring their garbage and recyclables to the transfer stations themselves. As shown in Figure 2, Allied and Waste Management also provide transfer services for their own collection vehicles; and Waste Management provides long-haul disposal services to the City of Seattle. These two firms also provide collection and disposal services for construction, demolition, and landclearing (CDL) debris in the region. If King County were to leave the system, and one or both of these firms provided transfer and disposal services, the two firms would provide not only the bulk of collection services but also the bulk of disposal services.

There is little price variation between private firms: The lack of price variation between private-sector firms indicates the absence of strong competition in the region. In fact, the tipping fee of $82.50 set for disposal services by King County is the same fee charged by the private-sector firms. They charge this fee even though the Division provides many additional services that the private-sector stations do not, such as self-haul services and waste reduction and recycling programs and services. While their costs are

Figure 2: Solid Waste Collection, Transfer, and Disposal Markets in King County, 2002



Source: Data from King County Solid Waste Division Planning Section and Seattle Public Utilities Tonnage Reports

likely to be substantially lower than the County's, the private-sector firms charge the County's tipping fee to their customers – not because competition forces them to, but because state law and the WUTC rules on collection allow them to charge the prevailing fee (RCW 81.77.160). If the County's fee were $90, they would be able to charge $90. Being able to charge a set price rather than a competitive price allows them to benefit from excess profits, while consumers pay higher costs.

Services vary between the private and public providers: Allied and Waste Management offer transfer station services that are significantly different from those offered by King County and the City of Seattle. The difference is that the public-sector stations serve self haulers, who are more costly to serve because they bring in small amounts of waste per trip compared to the larger commercial trucks. Public policy decisions have led to the provision of self-haul services to residential and non-residential customers. However, providing this service is more costly on a per ton basis, making the overall average cost of operating public transfer stations higher than the average cost of operating the private-sector stations that serve only commercial trucks. If there were true competition in transfer services, the private-sector firms would be providing self-haul services as well.

Concern with competition at the state level in Washington's solid waste industry is evidenced by the fact that collection services continue to be regulated by the WUTC. The WUTC, however, regulates solid waste collection services only – not transfer or disposal. And there is some question regarding the degree to which the WUTC is successful in promoting competitive pricing for collection services (Appendix F).

The fact that the WUTC does not have the authority or responsibility to provide any economic regulatory oversight of disposal services in the region may be because the public sector has traditionally provided disposal services at landfills, as disposal was considered an essential public service. Waste export has only been in existence in King County since 1991. Concerns about competition in disposal services are relatively recent.

In summarizing market conditions in King County, three critical conclusions emerge:

- The solid waste industry, nationally and in King County, is characterized by a small number of firms. Particularly in the disposal and transfer/transport segments of the industry, the underlying economic structure of the solid waste industry, along with the existing regulatory structure, make it difficult for competition to occur.
- The fact that the solid waste industry in King County consists of only a few (essentially two) large, vertically integrated firms has the potential to lead to competitive market failure. In the future, these firms have the potential to wield significant market power, to provide limited choices for customers, and to raise rates.
- The regional market situation is unlikely to be remedied by economic regulation of private-sector firms, and after Cedar Hills closes may no longer be kept in check by the public-sector presence. In the past, King County's presence in the

> disposal market has kept rates low, constraining vertical integration of the private sector and limiting the exercise of market power by the two major firms operating in the region. The hypothetical market power of the County as the dominant disposal provider in the region is mitigated by its status as a public-sector provider whose business objective is not profit, but provision of comprehensive, high-quality services. Its accountability derives from the public decision-making process, where business decisions (such as providing costly self-haul services) have been guided by public choices about service levels rather than profits.

Given the highly concentrated market, and evidence that the level of competition is low, King County's ongoing presence in the disposal market serves an important function as a competitor and as provider of an upper limit on fees. In light of the pending closure of Cedar Hills and the policy decision to move to private waste export for disposal, the County should promote a strategy that enhances competition in the disposal market, as it will no longer be a direct provider/competitor for those services. Encouraging competition among private-sector providers is a key consideration in assessing the need for a public presence in the waste disposal industry and in making a case for a County-owned intermodal facility for solid waste export and disposal in the region.

CONCERN FOR INTERMODAL CAPACITY FOR SOLID WASTE

In looking ahead to waste export, the Division considered the question of how best to implement long-haul transport of solid waste. Besides rail, there are other forms of long-haul transport such as trucking or barging; these modes of transport are examined under *Other Alternatives Considered*. For reasons explained in that section, rail hauling is likely to be the primary method of transport for solid waste.

While railroad capacity is available, there might be insufficient intermodal capacity to reliably handle the region's waste in the future. And reliable waste export depends on consistent, long-term intermodal handling capacity to move the County's waste.

A truck-to-train intermodal facility is more than just a transfer site along a stretch of rail line. It is a large, complex facility with unique requirements and constraints. It carries with it, the following minimum requirements for efficient intermodal transfer of solid waste:

- **Size of the Site** – At least 10 acres
- **Site Configuration** – Able to support the facilities and space needed for intra-site truck and train traffic
- **Land Use Zoning** – Industrial
- **Proximity to Residential Areas** – Prefer sites that are not near, or do not impact, residential areas
- **Proximity to Railroads** – Within 200 feet

The following discussion summarizes important findings about existing and potential future intermodal handling capacity for solid waste in the region. More detailed discussion is provided in Appendix G.

For purposes of this discussion, **intermodal facilities** are yards capable of handling the arrival and departure of whole trains, loading and unloading cargo from the trains, and storing full and empty cargo containers. **Spot facilities** are areas where groups of rail cars can be set or "spotted" for loading and unloading by switch engines. Spot facilities do not have the rail space for the arrival and departure of whole trains and are dependent upon other railyards for this function.

Intermodal Facilities

There are only three existing intermodal sites in the region that handle commercial cargo, and only one of these facilities, Argo Yard, handles solid waste. These existing intermodal sites were developed and are owned by the two railroads that serve the western United States. The Union Pacific Railroad (UP) intermodal facility is at the ArgoYard in South Seattle, and the Burlington Northern/Santa Fe Railroad (BNSF) has

two intermodal facilities – one at its Seattle International Gateway in Seattle's SODO District and the other at the South Seattle Domestic Intermodal HUB near Tukwila.

Spot Facilities

There are two spot facilities in the region where waste containers are loaded from trucks to train cars. They are located on tracks adjacent to Allied's Third & Lander transfer station, also in Seattle's SODO District, and on tracks adjacent to Allied's Black River Quarry in Renton, which handles CDL debris. Both sites are accessible only by BNSF tracks, and both are dependent upon BNSF's Interbay Rail Yard near the Magnolia neighborhood in Seattle, for arriving and departing whole trains.

Regional Intermodal Needs

All of King County currently exports approximately 850,000 tons of waste annually, consisting of the City of Seattle's waste stream and CDL. When King County begins exporting its solid waste, approximately 2.3 million tons of waste will be exported from the region, an increase of 170% from current levels. There is some question as to whether the existing intermodal and spot facilities can handle this increase.

The region's existing intermodal yards are built-out to capacity with no space to physically expand. Expansion of existing intermodal capacity can only be achieved through additional work shifts and tighter rail schedules. Any expansion of intermodal capacity for solid waste handling at these facilities, however, would be problematic, because it would significantly impact commercial cargo handling capacity for the railroads and the Port of Seattle. The South Seattle Domestic Intermodal HUB provides dedicated service for domestic cargo only. Argo Yard and Seattle International Gateway primarily provide services to national and international shippers using Port of Seattle facilities. These facilities were built to provide service to businesses that ship large volumes of commercial cargo through West Coast ports to the Midwest and East Coast. International intermodal traffic is projected to grow at a rate of between 3.4% and 4.4% compounded annually over the next 20 years for Pacific Northwest Ports [7], so increases in capacity for handling cargo will likely make it even more difficult and expensive to add capacity to handle solid waste.

As capacity at the existing facilities becomes more constrained over time, the UP and BNSF railroads are likely to give priority to their larger national and international commercial cargo customers. This is because long-distance cargo trains (with multiple destinations for the cargo they carry) generate more revenue on a per train basis than trains carrying solid waste, which are comparatively lighter and travel shorter distances.

[7] Marine Commerce Forecast prepared for the Washington State Public Port Association and Washington State Department of Transportation in 1999.

For similar reasons, it will also be difficult to add capacity at the spot facilities served by BNSF's Interbay Rail Yard. Any increase in waste received at the spot facilities would add to train traffic departing and arriving at Interbay. An increase in traffic between Interbay and Third & Lander (or Black River Quarry) could conflict with BNSF's mainline operations of handling commercial cargo for the Port of Seattle and supporting Sound Transit Commuter operations. Also, Interbay is fully developed as a switching yard; it has no intermodal capacity and does not have room to expand to provide it.

Guaranteed, dependable intermodal capacity is essential for waste export to be a viable disposal alternative. There is concern that the private sector may not add new intermodal capacity dedicated to solid waste. There are not many suitable areas in the region given all the requirements for siting such a facility. The primary focus of the railroad companies, who own the three existing intermodal yards and spot facilities, will be to meet the needs of their commercial cargo customers. Any new capacity that they (or any other third party) develop will most likely be dedicated to moving commercial cargo and serving destination points on their rail line. Railroads may choose to provide intermodal services for solid waste, but the increased pressure this places on their intermodal facilities may raise prices or conflict with commercial cargo operations. Companies that transfer or dispose solid waste may not wish to incur the high capital costs of developing an intermodal site prior to securing a large contract to handle the region's waste stream.

Relying on existing private-sector intermodal or spot facilities heightens the County's concern for the lack of competitive choices in the market for disposal services. Waste Management and Allied have developed arrangements for intermodal capacity with the railroad companies, and they use this capacity to ship solid waste to the landfills they operate. Given that these arrangements are already in place and there is limited space at existing facilities, it may be difficult for potential competitors to secure intermodal capacity in the region. Tracks leased by Allied at its Third & Lander facility or Black River Quarry would not be available to a competitor. It may also be difficult for a competitor of Waste Management to secure space at the Argo Yard, since it uses that site to export Seattle's waste. Without access to an intermodal facility, potential competitors would be prevented from bidding on disposal in the region because they would have no ability to get wastes to their landfills. Even if the County were to rely entirely on one of the existing intermodal facilities, it would limit the choice of landfills to those served by that railroad company. Similarly, if a private-sector firm developed an intermodal facility, it might site that facility on the rail line that served its own landfill. Truly competitive choices depend on adequate intermodal capacity that is accessible to both rail lines and all potential solid waste export companies.

CASE FOR A COUNTY-OWNED SOLID WASTE INTERMODAL FACILITY

The King County Executive's preferred alternative is to construct, own, and operate an intermodal facility to ensure that waste export will occur in a manner that serves the region's needs after the Cedar Hills Regional Landfill closes. This approach is consistent with the County's responsibility for ensuring waste disposal is provided at the lowest cost, reliable, and consistent with the Division's goals for waste reduction and recycling. As outlined in this section, this approach adequately addresses two key concerns facing future waste export in the region:

- That there is adequate competition in the marketplace for waste export services
- That sufficient intermodal handling capacity for solid waste is available in the future

The Division developed the proposal that follows by evaluating it against some of the same criteria used in the CSWMP (KCSWD 2001) to determine whether waste export was the preferred alternative for future waste disposal. Those criteria include:

- Feasibility of implementation
- How it promotes competitive choices
- How it addresses concerns for intermodal capacity
- Its costs compared to other alternatives
- Other considerations, such as environmental and regional economic impacts

Six other alternatives to this proposal were evaluated using the same criteria. Those alternatives are discussed in the next section.

Preferred Alternative

The King County Executive's preferred alternative is to construct, own, and operate an intermodal facility that can become fully operational when the Cedar Hills Regional Landfill reaches capacity and closes. This facility would serve as a location where solid waste is received from transfer stations in the County and loaded onto railcars or barges for transport to an out-of-County landfill. The ideal site for an intermodal yard would not only be adjacent to rail lines, but also accessible to both railroads operating in the western United States – BNSF and UP. If possible, it would be located near water to allow for the possibility of barging waste, should this method prove to be cost effective. It would also be strategically located to the County's network of transfer stations, minimizing short-haul truck transport costs. It would be of sufficient size to handle the County's projected waste stream, be located in an industrial area with compatible uses, and be accessible to roads to handle truck traffic. If possible, the site would be of sufficient size to allow not only for intermodal capabilities, but also transfer capabilities. This latter capability would allow the facility to receive uncompacted waste from transfer stations and then compact the waste for export.

By having an intermodal facility, the County would likely have a larger number of landfill companies bidding to provide long-haul transport and waste disposal services. Under this scenario, the landfill operator(s) bidding for the County's waste stream would negotiate with the railroads or barge operators for long-haul transport, and the County would receive bids with a combined price for disposal and long-haul transport. Alternatively, this approach would allow the County to contract directly with the railroads or barge operators for long-haul services and negotiate a separate contract for disposal.

Feasibility of Implementing the Preferred Alternative

Developing a publicly owned intermodal facility is feasible to implement as long as the County is able to locate a suitable site when Cedar Hills closes. As discussed earlier, there are specific requirements of an intermodal site that greatly limit the number of feasible locations. Implementing this alternative by the time Cedar Hills closes requires that the County move quickly to secure the site, obtain the appropriate permits, and construct the facility. The permit requirements and the time needed to develop the facility will be site-specific, depending upon the zoning of the potential land parcel and condition of the property. However, if a site is selected soon, there will be sufficient time to construct such a facility before Cedar Hills closes.

The Division has the knowledge and capacity to operate an intermodal facility, as it has many of the same characteristics of the Division's existing operations, which staff have years of experience managing and operating. While the transition from landfill management to the management of an intermodal facility will involve staff reductions, remaining staff will already have the skills to operate the facility. Any retraining necessary can be done by the time the facility is operational.

Promotion of Competitive Choices

A publicly owned and operated intermodal facility would significantly enhance competitive choices for solid waste services among private-sector providers when the County moves to waste export.

At present, there are two major providers of waste export disposal services in the region – Allied Waste Industries, Inc., which exports a modest amount of construction and demolition debris to Roosevelt Landfill in Klickitat County, Washington, and Waste Management, Inc., which exports the City of Seattle's waste and CDL from the region to Columbia Ridge Landfill in Arlington, Oregon. In addition, Allied exports solid waste from Snohomish and other counties in Western Washington. These two companies have secured local intermodal and spot capacity to transport waste to their landfills. Landfills owned by other companies that are potential competitors for King County's solid waste stream could not easily obtain local intermodal capacity in the region, which would

effectively preclude them from being able to compete for King County's solid waste. A publicly owned and operated intermodal facility, situated and developed so that it could serve both major rail lines, would explicitly allow for access to a variety of disposal sites. Removing the need to secure intermodal capacity will make it relatively easy for the operator of any landfill with rail access in the western United States to bid to provide the County solid waste disposal service.

The County has already received letters of interest from potential competitors that explicitly state their interest in bidding for King County's solid waste and their support for the publicly owned intermodal facility (Appendix H). There are currently at least five companies with existing and planned landfills potentially able to receive the County's waste. While enhanced competition resulting from a publicly provided intermodal facility is a desirable and likely outcome, the number of firms (landfills) that would be expected to bid on contracts to transport solid waste from King County is currently not more than four or five. This low number is attributable to the simple fact that there are only a few solid waste disposal firms that exist in the western United States. However, it is more beneficial for the marketplace to have competition among four or five firms than between only two. Any increase in market competition would potentially lower costs to ratepayers.

Public control of an intermodal facility could allow for the long-haul transport and disposal services to be procured separately. This may benefit ratepayers more than a contract price that combines rail haul and disposal, if the combined price reflects the waste company's mark-up on the rail portion of the contract. In other words, with separate contracts, the County would only have to pay for the rail company's mark-up, not the disposal company's markup on top of that – reducing overall costs. In addition, if landfill operators do not have to negotiate with railroads to submit a bid, they will find it easier, and thus be more likely to bid.

A publicly controlled intermodal facility may also provide ratepayer savings in collection as well as disposal, particularly if the intermodal facility also has transfer capability (that is, it is able to receive non-compacted garbage from collection trucks as well as compacted waste for export). First, any savings in disposal costs brought about by the intermodal facility will likely be passed on to collection customers, since disposal costs typically make up about 40% to 50% of overall collection costs. In addition, communities contracting for waste collection could specify that waste be delivered to the intermodal facility (rather than a more distant private facility) at a specified price. As explained in Appendix F, the current regulatory structure allows private-sector collection companies to charge additional profits on transfer and disposal activities when they provide such services.

The County has contracts with its city customers that require them to direct waste generated within their jurisdictions to the King County solid waste system. This requirement would include the County's transfer stations and/or the intermodal facility. Thus, it appears that having sufficient waste running through the facility will not be an issue.

Intermodal Capacity and System Reliability

As discussed previously, a major requirement for the overall viability of waste export as a disposal strategy is that adequate intermodal capacity be available in the future. There is significant concern that there will be insufficient truck-to-train intermodal handling capacity for the region's waste, given the limit on existing capacity, the growing need for waste export services in the region, and the likelihood that existing capacity will increasingly be dedicated to transport of commercial cargo.

Public development, ownership, and operation of an intermodal facility will clearly address this concern. The facility can be of sufficient size to assure adequate capacity to handle the County's waste stream. The County can also ensure that the facility will be dedicated to solid waste handling, and thus not compete with intermodal handling of commercial cargo or other activities. This will ensure the reliability of the disposal system, and keep solid waste management from interfering with existing intermodal capacity needed for the movement of commercial cargo in and out of the region.

In addition, system reliability will be enhanced if the site can be located adjacent to a navigable waterway. It will allow for the possibility of barging waste, in the event of significant damage to the region's rail or road network due to an earthquake or other disaster. A sustained interruption in garbage disposal service has the potential for human health as well as environmental impacts, and having the potential to barge wastes would mitigate against that occurring. The Division could ensure the site has barge access when it proceeds to site such a facility. Current intermodal facilities in the region are not located adjacent to a navigable waterway, so relying on existing capacity would not provide this added system reliability.

Cost

Public ownership and operation of an intermodal facility would be financially advantageous to County ratepayers. Although public funds will be needed for land acquisition, construction, and operation of the facility, the facility will promote further competition among providers of private-sector waste export services. By promoting more competitive choices in disposal, the facility is anticipated to drive down future waste export prices.

The financial question, from the ratepayers perspective, is whether the savings due to anticipated lower disposal prices brought about by increased competition in the future are greater than the capital and operating costs associated with a publicly owned intermodal facility. The capital costs of an intermodal facility, in year 2003 dollars, are estimated at about $25 million, and the annual operating costs at about $1.3 million (Appendix I). The average capital and operating costs of an intermodal facility for the County's waste are estimated at $2.40 per ton, when spread out over the 20-year projected life of the

facility (Appendix I). This means the Division would need to save only $2.40 per ton on the price of waste export, compared to what it would otherwise pay for waste export, for the facility to pay for itself. This is not a substantial amount; in fact, it is only 6% of the $42.73 per ton that the City of Seattle currently pays for waste export, including intermodal handling, rail-haul transport, and disposal. The bulk of waste export costs are in long-haul transport and disposal, not intermodal handling.

It is reasonable to assume that increased competition brought about by a publicly owned and operated intermodal facility – plus the fact it would allow the Division to avoid paying the private sector for intermodal handling services – would save at least $2.40 per ton. As Appendix E shows, there are examples where communities in other parts of the Country have observed reductions in private-sector disposal prices of around 40% when the public sector has acted to promote competition. However, it is difficult to predict with precision the degree to which increased competition will reduce waste export prices in this region. The market is dynamic, and waste export costs appear to have decreased as capacity has grown in the western United States over the past 10 years. Future innovations in disposal methods may create further price reductions. In addition, it is not possible to determine the price at which waste export providers might be willing to bid to dispose of King County's solid waste because cost information is proprietary. However, the Division has gathered compelling evidence that the savings brought about by the intermodal facility are likely to be greater than $2.40 per ton, and that the facility will substantially benefit ratepayers.

The Division's analysis begins with establishing a baseline – what the estimated waste export costs would be if the County did not own and operate an intermodal facility but instead relied on existing market participants and facilities in place now. Without a facility, it is reasonable to assume that the County would be able to receive a waste export price comparable to that paid by the City of Seattle. Seattle's waste export cost is currently $42.73 per ton. However, provisions in Seattle's waste export contract provide that the disposal price will rise at only 70% of the rate of inflation, and there will be $1.50 per ton price reductions in 2005 and 2007.[8] Given these contract provisions[9] and assuming 3% annual inflation, the price the County could expect to receive in 2012 (around the time Cedar Hills is expected to reach capacity) would be about $36.70 per ton in constant year 2003 dollars.[10]

The financial question then becomes whether, with a publicly owned and operated intermodal facility, the County can expect to pay less than $36.70 per ton for intermodal handling, long-haul transport, and disposal services. The costs of each of these components were estimated as follows:

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[8] See Amendment #2, *The City of Seattle Contract with Washington Waste Systems, Inc. for the Transportation and Disposal of Waste*.

[9] Seattle's waste export contract extends until 2028, but it can opt out of its contract in 2009, 2010, or 2011, and may be able to negotiate a lower price. It also may have other options if it decides to rebid its contract.

[10] If inflation were lower than the assumed 3% (as has been the case over the past few years), the price in 2012 would be higher (in 2003 dollars).

- **Disposal:** As indicated above, a publicly owned intermodal facility will allow other landfills, in addition to those that currently exist in the region, to bid for King County's solid waste stream. As indicated in Appendix H, potential competitors are very interested in accessing the market for King County's waste. One potential competitor provided a range of potential disposal prices between $12.50 and $16.50 per ton, depending on the size of the waste stream and longevity of the contract.[11] The large volume of the region's waste stream (more than 1 million tons per year) would provide the County substantial negotiating power to obtain the lower price. However, to be conservative, the mid-point of $14.50 per ton was chosen for this analysis.[12]

- **Long-haul Transport (rail):** Long-haul transport or rail costs will depend greatly on several factors, including the frequency of train trips, payload weights achieved, distance traveled, and the profit margins of the rail companies. HDR Engineering, Inc. adapted a model for estimating rail costs, which it used on the East Coast, to estimate the per ton rail costs the Division would likely expect (Appendix J). This model was used to provide estimates of rail-haul costs in 2012 between an intermodal facility in Seattle and various landfill destinations. The model's estimate for a hypothetical landfill destination of Boise, Idaho (600 miles away), leaving every day, with containers having a 27-ton payload is about $13.90 per ton, in year 2003 dollars.[13]

- **Intermodal Handling:** HDR Engineering, Inc. also developed estimates of capital costs for an intermodal facility specifically designed to meet the County's waste export needs. Concurrently, the Division estimated annual operating costs for the facility. These cost streams were amortized over a 20-year period (anticipated life of this facility) and averaged to arrive at a per ton cost of $2.40 (year 2003 dollars) for intermodal handling. Cost assumptions used in this analysis are provided in Appendix I.

Summing these costs yields a waste export cost estimate of about $30.80 per ton. This is a savings of $5.90 per ton over the baseline price, which assumes the County does not own an intermodal facility and is unable to secure competitive choices. Given that the County is anticipated to dispose (export) about 1.1 million tons per year by 2012, this

[11] This information is used because it indicates a potential competitive price for disposal services. In using this information, the Division is not indicating a preference for using this facility or any other waste export site. Such a decision is many years away, and would be based on a competitive procurement process and a full review of all bids.

[12] This potential competitor might be willing to provide a similar pricing arrangement as that present in Seattle's contract, where disposal prices rise at only 70% of the rate of inflation. If this were the case, the estimated price would be $12.00 per ton, in year 2003 dollars. The $14.50 estimate assumes that the disposal company pays any local host fees.

[13] This cost estimate would be lower if trains left only when full (rather than every day), or if the County were able to achieve container weights greater than 27 tons. Loads as heavy as 35 tons per container could be achieved if the intermodal site had transfer capabilities, allowing the Division to save $1 to $3 per ton. Costs would also be less if the landfill receiving the County's wastes was closer than 600 miles; Boise was selected because a nearby landfill provided the price quote used in this analysis.

estimate results in ratepayer savings of about $6.5 million per year, in 2003 dollars. All else being equal, this would lower tipping fees by about $6 per ton.

As the above analysis indicates, there is evidence that public ownership of an intermodal facility will provide substantial ratepayer savings. The case studies described in Appendix E confirm that this level of savings can be expected. Mecklenburg County in North Carolina, and the City of Memphis, Tennessee, both realized savings of about 40% when they acted to promote competition in the market for disposal services. This compares to a more conservative estimate of about a 16% reduction for King County ratepayers in the analysis above. In summary, the intermodal facility will more than pay for itself. It will be an extraordinarily beneficial investment, yielding ongoing dividends in the form of substantially lower disposal fees for ratepayers. Lower disposal rates will keep the cost of living and doing business in King County low, which is important to the economic vitality of the region.

Other Considerations

The criteria described above were the primary factors shaping the Executive's preferred alternative to own and operate an intermodal facility. However, the Division considered several other criteria as well in the process of arriving at this conclusion.

A publicly owned and operated intermodal facility may provide enhanced flexibility in managing the region's waste stream. Securing intermodal capacity will become more difficult and expensive over time as demand for intermodal capacity in the region grows. Having intermodal capacity in hand will make any change in solid waste disposal strategies easier to implement. Not only could the Division more easily switch to a lower cost disposal service provider, having an intermodal facility would make it easier to change disposal methods and/or increase the role the Division plays in recycling. For instance, it is possible that innovations in recycling technology may make recycling less expensive relative to disposal in the future, particularly as the County's waste disposal costs increase after Cedar Hills closes.[14]

The intermodal facility may also make it easier to team with other jurisdictions in developing waste disposal strategies, which could be beneficial. The facility could be sized and situated to enable the County to team with other jurisdictions, such as Seattle, for solid waste export services. Because of economies of scale, costs will decrease as the volume of the waste stream increases. And a larger contract will provide the region with more bargaining power with private-sector providers, to help drive waste export prices down even further. The mutual benefits of regional collaboration could be explored as the facility is constructed and operated.

[14] This may be occurring now in New York City. After the City's waste disposal costs increased dramatically following closure of the City's Fresh Kills landfill, and the City's move to waste export, a private recycling company has offered lower prices to receive the City's waste than offers from the private waste export service providers (Source: New York Times. May 4, 2003. *Something Green in the Garbage? City Recycling May Pay After All*).

In addition, by adding intermodal capacity and dedicating it to waste export, constructing and operating a publicly owned intermodal facility will alleviate concerns that waste export would conflict with intermodal handling and rail transport in the region. Transport of commercial cargo is important to the economic vitality of the region, and it is important that waste export not impact the regional economy. It is equally important not to add to traffic congestion in and around existing intermodal facilities. The facility could be located and operated so as to minimize traffic impacts. Before any action is taken, however, the County would undergo State Environmental Protection Act (SEPA) review and mitigation, as appropriate, for construction and operation of a facility. Environmental protection is a core element of the Department of Natural Resources & Parks mission.

Summary

In summary, building an intermodal facility is a prudent, cost-effective approach to meeting the region's disposal needs as the County transitions to waste export. It represents a change in how solid waste will be disposed from public operation of a regional landfill to private-sector disposal at an out-of-County landfill. The County will not compete with the private-sector companies for disposal, but will work to maximize competition among these providers. In this way, the County will continue to be accountable to the public for low rates and reliable, high-quality disposal services.

This approach is consistent with the *Final 2001 Comprehensive Solid Waste Management Plan* and the Interlocal Agreements with the cities. Maintaining a regional waste export system – including a strategically located intermodal facility – would be advantageous because of economies of scale associated with landfill disposal. On a per ton basis, the average cost of landfill disposal declines as more waste is disposed. Therefore, disposing a consolidated waste stream at one large landfill is less expensive than disposing the same amount of waste at several smaller landfills. In addition, having a larger, regionally consolidated disposal stream will give the County greater bargaining power to negotiate more favorable contract terms for waste export, simply because a larger contract is more valuable to private-sector bidders.

OTHER ALTERNATIVES CONSIDERED

The preceding section described why a publicly owned and operated intermodal facility is the best course of action the County can take to implement waste export in a manner that ensures regional ratepayers receive low-cost and reliable disposal services after the Cedar Hills Regional Landfill closes. The Division considered numerous other alternatives to this proposal before arriving at a conclusion. This section summarizes the results from these analyses, and explains why the other alternatives were not selected.

One alternative is not examined here: the possibility of barging waste instead of relying on rail or truck for long-haul transport. Barging waste is likely to be a feasible alternative, if a site on a navigable waterway can be located – some communities on the East Coast do use barges as a method of waste transport. However, little is known about the cost and overall feasibility of barging waste from King County. Several landfills around the Columbia Gorge have water access; however, getting to them by barge would be twice the distance because vessels would need to travel through Puget Sound, around the Olympic Peninsula, and up the Columbia River. In any event, barge access would be a reliable backup method of waste transport, should some type of natural disaster impact roads and railways. Ideally, an intermodal site dedicated to solid waste handling would be located on a site that has water access. This would allow the potential for barging waste to be explored, and would help ensure the reliability of the disposal system.

The Division reviewed the following six alternatives using the same criteria as those used to evaluate the preferred alternative, including: feasibility of implementation, the degree to which the alternative promotes competitive choices, system reliability, overall cost, and other factors.

Alternative 1: Contract for Intermodal, Long-haul, and Waste Disposal Services

Under this alternative, the County would contract for waste export services, including intermodal handling, long-haul transport, and disposal at an out-of-County landfill. The arrangement might be similar to current contracts that the City of Seattle and Snohomish County have for waste export. This alternative to implementing waste export would not call for any additional action by the Division other than capital improvements to prepare the transfer system for waste export, including the installation of waste compactors.

The alternative should be feasible to implement when Cedar Hills closes, if there is adequate intermodal capacity to handle the County's waste stream. The fact that this type of contracting arrangement for waste export exists in the region demonstrates the general feasibility of this alternative. It is likely that the two existing private-sector companies that currently provide intermodal handling and waste export services in the region – Waste Management and Allied – would be interested in bidding to export King County's waste.

While it is feasible to implement, this alternative does not promote competitive choices in the market for the County's waste stream. As mentioned previously, the only two companies that have secured intermodal capacity for solid waste handling in the region are Allied and Waste Management, who use this capacity to transport waste to their landfills. As discussed in the previous section, it may be difficult for potential competitors to secure intermodal capacity. In addition, there are few existing facilities, increased use of existing capacity may impact rail and economic activity, and available capacity may limit long-haul transport to one rail line. Since intermodal capacity is crucial for waste export, potential competitors for the County's waste stream may not be in a position to bid for disposal services.

In addition, lack of competitive choices in disposal may also impact collection costs for the ratepayer. The two companies that currently provide waste export services in the region also provide nearly all the collection services in King County. If greater competition does not occur and one of these two companies exports the County's solid waste, it will further strengthen these companies' overall share in the regional solid waste market. As Appendix B describes, the potential for increased vertical integration and market dominance may have adverse consequences for ratepayers. Also, if these two companies control more of the regional solid waste market it will become even more difficult for new competitors in collection services to enter. As with disposal, promoting competition in collection is in the interest of County ratepayers because it is likely to lower costs and enhance the level and quality of service.

This alternative also does not address concerns regarding the adequacy of existing intermodal capacity and system reliability. As previous sections of this document explain, current intermodal capacity for solid waste is likely to become increasingly scarce. As the economy grows, increasing regional demand for handling commercial cargo at existing intermodal facilities could drive prices up for intermodal handling of solid waste. Any development of a new intermodal site by a solid waste company may impede the County's ability to choose among potential disposal service providers, particularly if the facility is accessible by only one rail line. And while the County could contract for long-haul transport and disposal services separately from intermodal services, it might pay a premium for intermodal services if there is only limited intermodal capacity in the region. Competition would result only if there is an excess of privately provided intermodal capacity available for solid waste, not if capacity was just sufficient to meet the County's needs. In addition, current facilities are not located near a navigable waterway, so by relying on existing capacity the County would not be able to barge solid waste in the event of an emergency.

Because it does not enhance competitive choices, this alternative will likely result in higher disposal costs for ratepayers. Case studies provided in Appendix E show that communities have paid as much as 40% more in disposal costs when there was little competitive pressure on private-sector providers. In addition, this alternative may constrain some of the County's flexibility in managing how its waste is disposed. Without control of an already developed intermodal facility accessible to both rail lines, it

will not be easy for the County to change where the waste goes, potentially to switch to a more competitive disposal service provider or even to a different method of disposal or recycling. Finally, there may be some concerns regarding the impact of this alternative on the regional economy. If the already scarce existing intermodal or railyard capacity is used for solid waste, it may hinder the transport of commercial cargo and thus the regional economy.

Alternative 2: Assist in Siting an Intermodal Facility, Not Owned or Operated by the County

Under this alternative, the County would work with a private company to assist in siting an intermodal facility, but would not own or operate the facility. The County could issue a contract for assistance in selecting a site; construction, ownership, and operation of a facility; and long-haul transport and waste disposal. The County could choose to contract for these activities together, or separately.

This alternative is feasible to implement by the time Cedar Hills reaches capacity as long as a suitable site can be located, but there will be challenges. The alternative gives the County less control. For example, the County may want to put constraints on the use of the site, and may even want assurances that the owner-operator of the facility not be allowed to bid for long-haul transport and disposal services. Such contract provisions may be difficult to enforce. For example, in early 1992, the County implemented contracts with Allied and Waste Management for handling CDL debris. These contracts were written in a way that would promote competition between the two providers; however, the contracts proved contentious.

Under this alternative, it would be more difficult for the County to ensure competitive choices in waste disposal. The County could establish a procurement process whereby the owner-operator of the intermodal site would not be favored in bidding for disposal and long-haul transport services, and that the facility be open to all firms. But this approach may not be easy to implement. There would be a strong financial incentive for companies owning an intermodal site to use that facility to ship waste to their landfills, and/or to use that facility to serve their collection vehicles. The bulk of solid waste handling revenues are likely to be in collection and long-haul transport/disposal services, not in intermodal services. Firms that are likely to bid for solid waste intermodal services alone may be the two that already have a presence in the region, as they may see the potential for this facility to serve their collection vehicles or their landfills. The two firms already in the region may see owning and operating the facility as a way to pursue their demonstrated business strategy of vertical integration. And this strategy has the potential to increase costs to ratepayers. There is a precedent in King County for privately owned transfer stations to price their services in a manner that provides excess profits at the expense of County ratepayers.

This alternative addresses some of the concerns regarding intermodal capacity and system reliability, since the County could assist in siting the facility. However, it introduces some level of risk, because the new intermodal capacity that this alternative creates is privately owned. There may be a danger that private ownership could change hands, and/or the site will be converted to some other use. Intermodal capacity may become quite valuable as it becomes more scarce, perhaps providing pressure to convert the facility to transporting commercial cargo instead of solid waste, or to raise contract prices. The contract would need to be structured such that the facility is dedicated to solid waste for a long term.

The cost of this alternative may be somewhat higher than the Executive's preferred alternative for a publicly owned and operated intermodal site, particularly if the County has no control over the pricing structure. The contracting process would be more complicated, especially if there are separate contracts for intermodal handling and long-haul transport and disposal. Contract administration would add a cost element not present if the facility were publicly owned. Finally, a publicly owned and operated facility may have certain other advantages, such as the ability to ensure flow control – i.e., the ability to direct solid waste to the most appropriate location for disposal.

Alternative 3: Maintain Public Ownership of an Intermodal Facility, Not Operated by the County

Another potential alternative is for the County to site and own the intermodal facility, but contract for operation of the facility. Public-sector control of an intermodal facility does not necessarily mean that the facility itself needs to be operated by public employees. The County could conceivably establish a contracting process whereby a private company operates the facility, but the County retains clear control over it.

This alternative is similar to the Executive's preferred alternative in several respects. There may be some concern that private operation of the facility could impair competition, if the firm that secures the contract to operate the facility has an advantage in securing the larger and more lucrative waste export contract. However, as long as contracts for waste export versus operation of the intermodal facility are separate, this situation could be dispelled in the procurement process for disposal services. This alternative would also address concerns about intermodal capacity and system reliability.

This alternative could be more costly than the Executive's preferred alternative. Allowing for public employees to operate the facility would remove costs associated with developing, administering, and overseeing a contract. A private firm would require some level of operating profit, whereas a publicly run operation does not. County regulations would likely call for the contract to require prevailing wages for employees, which would reduce a private operator's ability to realize savings in labor costs. The Division's workforce currently has the expertise necessary to operate this facility. The Division is confident that it will be able to demonstrate that it can operate the facility in the most

cost-efficient manner possible. Finally, certain legal authorities suggest that a publicly owned but privately operated facility may not provide as strong an ability to ensure flow control to the intermodal facility, resulting in an increased risk of higher public costs for disposal.

Alternative 4: Build a Landfill in Another County

One alternative to implementing waste export that has been implemented by other communities is to permit and/or build another landfill. This alternative can provide another way to contract with a private entity for waste export services, as a way to promote competition among private-sector providers. King County Council direction prohibits construction of another landfill within the County, so any new landfill would need to be outside of the region. The County could site the landfill itself, or work with other jurisdictions in the state to find an appropriate location. In fact, this alternative was considered in the CSWMP (KCSWD 2001).

This alternative would be difficult to justify since adequate landfill capacity exists outside of King County (KDSWD 2001). It would require a significant amount of effort to select a site and develop a landfill in another county. Developing a landfill in conjunction with other jurisdictions would be even more difficult, as other jurisdictions might have different approaches to disposal and/or contracts already in place. And host communities may oppose having a new landfill that serves another region, which would only add to the difficulty of implementation.

On the surface, this alternative would promote competition. In fact, if the only purpose of this alternative were to promote competitive choices among private-sector providers, the County might be able to do this at less cost by acquiring land and the necessary permits to build a landfill. The Division could then estimate the costs to develop and operate the landfill, but only proceed in doing so if it received bids that were higher than the estimated costs. However, the Division would still need to get the waste to the out-of-County landfill, so it would still need to have access to an intermodal facility that could ship waste to that site. If the County did not have an intermodal facility (or other means to get the waste to this out-of-County landfill), it would not be a viable alternative.

This alternative does not address concerns about the potential scarcity of intermodal capacity in the region for solid waste. While adequate disposal capacity exists in the region, with several rail- or barge-accessible landfills willing to accept the County's waste, the concern for adequate and reliable intermodal capacity would still need to be addressed.

The costs associated with this alternative are likely to be much higher than those under the Executive's preferred alternative. Costs of developing and operating a landfill in a drier region are lower than the costs of operating Cedar Hills, since there may be some savings in leachate control systems and buffers. But the costs of developing a landfill are

still substantial as land would need to be purchased near a rail line; there would be costs associated with obtaining the necessary permits; and there would be substantial costs for developing the landfill, such as installing liners, landfill gas systems, and other controls. Costs would decline if a larger landfill could be built, due to economies of scale in operating landfills but, as mentioned above, there would be costs in securing sufficient regional collaboration to support a large landfill site. Under no circumstances could a new landfill be sited and permitted for the same cost (about $25 million) estimated for an intermodal facility.

Alternative 5: Truck Waste to a Distant Landfill

This alternative removes the need for an intermodal facility entirely. The County could contract with the private sector or use the County workforce to truck wastes to distant landfills.

There are some apparent advantages to this alternative. It could be implemented easily since all landfills are accessible by road. This alternative would also promote competition in disposal, in that many potential bidders could have access to the waste stream. The system would remove the need for any intermodal capacity, because trucks could take waste directly from transfer stations to the disposal site. However, relying on roads introduces some level of risk to system reliability. There are always possibilities of prolonged closures in the mountain passes or road closures due to weather conditions or potential natural disasters. In the event of an emergency, the Division would not be able to use other modes of transport, such as rail or barge.

However, the drawbacks of this alternative are even more apparent. The costs of trucking waste to a remote landfill would be extremely high. Trucking waste (even assuming a compacted, 27-ton payload) over the mountains to the eastern part of Oregon or Washington would cost about $43 per ton.[15] This transport cost alone is about what Seattle currently pays for all components of waste export services, including intermodal handling, long-haul transport, and disposal. The fact that the City of Seattle and Snohomish County use trains to export waste rather than trucks strongly suggests that trucking waste is more expensive.

Moreover, there are significant impacts to the environment and traffic congestion from this alternative. Congesting highways with large garbage transfer trailer trucks traveling over long distances would add to the region's already taxed road network.

[15] This estimate is based on the experience of Portland, Oregon, which trucks its waste to an out-of-county landfill. It assumes a hypothetical landfill destination at the Oregon/Washington border, about three times the distance that Portland trucks its wastes.

Alternative 6: Leave Waste Export and Disposal to Cities and the Private Sector

Another alternative for consideration is a diminished public regional presence in coordinating solid waste disposal services. Conceptually, individual cities might contract with private haulers for disposal (and transfer) services, leaving the Division to provide disposal services in unincorporated areas. Under this scenario, much of the commercially collected waste would be brought to a few private stations for transfer and disposal, leaving the Division to receive a smaller amount of commercially collected and self-hauled waste at the public transfer stations. The County would not act to own and operate an intermodal facility after Cedar Hills closes, nor would it make any special effort to ensure that disposal services are reliable and rates are low. The cities would count on the private sector to provide reliable and cost-effective disposal services individually. Uniform regional rates would likely be foregone.

Such an alternative would change the regional approach to solid waste handling to one where solid waste disposal is managed by smaller, more disparate entities. The Division provides a variety of regional services besides disposal, such as self-haul services at transfer stations, waste reduction and recycling programs, and comprehensive system planning. Tipping fees received for disposal of waste brought to County transfer stations pay for these regional services. If waste is diverted from the public transfer stations and Cedar Hills, costs of these regional programs would be spread over fewer tons, and tipping fees at transfer stations would rise for ratepayers in cities and unincorporated areas that remain in the system (or these facilities and services would need to be transferred to the cities). Cities that leave the solid waste system would need to compensate the Division for any regional services they continue to receive, such as comprehensive system planning (required under state law) and self-haul services, or they would need to provide these services themselves. Further, they would need to assume direct liability for the waste they dispose. It is more cost-effective for such responsibilities to be coordinated at a regional level by having one comprehensive plan, an agreed-upon system for serving self haulers, and a coordinated approach to recycling and waste reduction.

This alternative would not promote competitive choices. Without access to intermodal capacity, other solid waste companies would have no ability to realistically compete for individual cities' waste disposal contracts. Individual cities' waste disposal contracts may be too small to entice potential competitors, even if they could access the market. The regional solid waste market would likely become more dominated by Allied and Waste Management, allowing them to become even more vertically integrated, with potentially adverse consequences for ratepayers. And without being able to control disposal prices or secure a competitive alternative, cities would become dependent on a market with only two major firms. In this environment, if individual cities negotiated disposal contracts with waste companies, they would have little buying power to secure favorable contract terms.

This alternative also would not address concerns for system reliability. There would be no regional entity with the responsibility for ensuring that adequate intermodal capacity exists, or that there is an emergency backup system in the event of an interruption in rail service. Given a situation where numerous cities have separate arrangements for how waste is disposed, it would be very difficult for the region to collaborate with other counties or municipalities, to take advantage of economies of scale to lower disposal costs. Having scattered, independent contracts with the same waste companies would make it difficult to implement any change in how waste is disposed. An individual city might not have the means to get waste to some other place.

In summary, this alternative represents a worst-case scenario; it would likely lead to high costs, administrative difficulties, and lower levels of service throughout the region. Lack of a public regional presence would hinder the region's ability to ensure waste disposal meets regional environmental and other public policy goals, and generally to plan for and manage solid waste.

CONCLUSION

This document presents a business case for the King County's preferred alternative to build, own, and operate an intermodal facility to implement waste export after the Cedar Hills Regional Landfill closes. This approach is consistent with the policy decisions and recommendations in the CSWMP (KCSWD 2001). The facility would allow the Division to fulfill its regional role of ensuring that environmentally protective, reliable, and low-cost waste disposal services are provided, even during the transition away from providing landfill services directly. This approach will directly address two key concerns facing waste export in the future: the concern that there be adequate competitive choices, and the concern that there be sufficient and reliable intermodal rail capacity to handle the region's solid waste.

The approach underscores that a public presence is necessary for providing solid waste services. Solid waste handling and disposal is an essential public service. The private sector has a major role to play in the regional solid waste system, and its role will grow after Cedar Hills closes. But there are risks in leaving the system entirely to the private sector, especially given the highly concentrated nature of the market. At the same time, there are great economies of scale in waste disposal, suggesting that a combined, coordinated approach be taken to determine how solid waste is disposed in the region.

King County
Department of
Natural Resources and Parks
Solid Waste Division
King Street Center, Suite 701
201 S. Jackson St.
Seattle, WA 98104-3855

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